

WHAT IS CLAIMED IS:

1. A high-pressure processing apparatus comprising:

a processing vessel including a processing chamber formed therein to perform a certain process onto an object in the processing chamber;

fluid feeding means which feeds a high-pressure fluid into the processing chamber;

fluid discharging means which discharges the high-pressure fluid from the processing chamber;

an agitating unit which is arranged in the processing chamber and is operative to flow the high-pressure fluid over the object by relative rotation to the processing vessel;

a communicating channel which is formed in the processing vessel to communicate inside and outside of the processing chamber;

a rotary driving member which is coupled to the agitating unit via a shaft portion provided in the communicating channel; and

a sealing portion which is provided between the shaft portion and the processing vessel to disconnect the processing chamber from the rotary driving member,

the fluid discharging means including a fluid discharging port formed in a certain position of the communicating channel closer to the processing chamber than the sealing portion to discharge the high-pressure fluid.

2. The apparatus according to claim 1, further comprising a labyrinth structure which is provided at a certain position of the communicating

channel and between the sealing portion and the fluid discharging port.

3. The apparatus according to claim 1, further comprising a fluid introducing channel which is formed in a certain position of the communicating channel and between the sealing portion and the fluid discharging port to draw a fluid identical to or different from the high-pressure fluid into the communicating channel, the fluid introducing channel being so constructed as to discharge the fluid that has been introduced from the fluid introducing channel outside of the processing vessel through the fluid discharging port.

4. The apparatus according to claim 1, wherein the agitating unit includes a support member on which the object is supported in the processing chamber.

5. The apparatus according to claim 4, further comprising a labyrinth structure which is provided at a certain position of the communicating channel and between the sealing portion and the fluid discharging port.

6. The apparatus according to claim 4, further comprising a fluid introducing channel which is formed in a certain position of the communicating channel and between the sealing portion and the fluid discharging port to draw a fluid identical to or different from the high-pressure fluid into the communicating channel, the fluid introducing channel being so configured as to discharge the fluid that has been introduced from the fluid introducing channel outside of the processing vessel through the fluid discharging port.

7. The apparatus according to claim 6, further comprising a labyrinth structure which is formed at a certain position of the communicating channel and between the sealing portion and the fluid introducing channel and/or between the fluid introducing channel and the fluid discharging port.

8. A high-pressure processing apparatus comprising:
a processing vessel including a processing chamber formed therein;
a support member which supports an object loaded in the processing chamber thereon;

fluid feeding/discharging means which feeds and discharges a high-pressure fluid in and out of the processing chamber;

a communicating channel which is formed in the processing vessel to communicate with the processing chamber;

a valve structural member which is operatively supported to the processing vessel in the communicating channel to openably close the communicating channel; and

a piping member which is communicated and connected to the communicating channel for feeding and/or discharging a corrosive fluid in and out of the processing chamber, the corrosive fluid being different from the high-pressure fluid.

9. The apparatus according to claim 8, wherein the piping member is so constructed as to be usable under an atmospheric pressure.

10. The apparatus according to claim 8, wherein the fluid feeding means includes a fluid feeding channel which is formed in the processing vessel to communicate with the processing chamber, a valve structural member which is operatively supported to the processing vessel in the fluid feeding channel to openably close the fluid feeding channel, and a piping member which is communicated and connected to the fluid feeding channel to feed and/or discharge the high-pressure fluid in and out of the processing vessel.

11. The apparatus according to claim 8, further comprising a fluid feeding hole which is formed in the valve structural member to feed the high-pressure fluid into the processing chamber.

12. The apparatus according to claim 8, wherein the processing chamber includes a reservoir section which temporarily stores a corrosive fluid therein to feed the corrosive fluid onto the object, the fluid feeding means is so constructed as to feed the high-pressure fluid into the reservoir section.

13. A high-pressure processing method comprising the steps of:
feeding a corrosive fluid into a processing chamber of a pressure vessel;
washing an object supportively loaded in the processing chamber with the corrosive fluid under an atmospheric pressure;
discharging the corrosive fluid out of the processing chamber; and
feeding a high-pressure fluid into the processing chamber to dry the object.

14. A high-pressure processing method comprising the steps of:

feeding a corrosive fluid into a processing chamber of a pressure vessel;
applying a developer onto an object supportively loaded in the processing chamber under an atmospheric pressure for development;
discharging the corrosive fluid out of the processing chamber; and
feeding a high-pressure fluid into the processing chamber to wash and dry the object.